

Turning the virtuous cycle

Australia is known for its vast, sunburnt land, picturesque cities, exotic animals and remarkable talents in medical research. Immunologists such as Sir Frank Macfarlane Burnet, Peter Doherty, Sir Gustav Nossal, Donald Metcalf and Jacques Miller, together with a string of current and past medical scientists, have made outstanding contributions in their chosen fields. However, with its spending on medical research and development (R&D) trailing that of many Organisation for Economic Co-operation and Development (OECD) countries, Australia risks becoming noncompetitive internationally. Recognizing the importance of health and medical research, the Australian government commissioned a review chaired by Peter Wills to examine the future of this sector that culminated in the insightful 1998 report entitled *The Virtuous Cycle: Working together for health and medical research*.

The government has acted swiftly on the recommendation of the Wills Review. It is committing to a A\$614 (US\$460) million increase in funding to the National Health and Medical Research Council (NHMRC) by 2005–2006. Approaching its final year, an Investment Review panel led by John Grant of Biota Inc. has been announced to study the effect of the funding increase and to examine the forthcoming needs of health and medical research. This report is due to the Minister for Health and Aging by March 2004.

What can Australians expect from this report card? A study (*Performance Measurement Report 2000–2003*) released by the NHMRC in December 2003 suggests that the increase in funding has had a tremendous positive effect on health and medical research in Australia. The NHMRC increased its research expenditure almost 50% in three years to just over A\$300 (US\$225) million in 2003. It has established several collaborative studies, identified priority areas of research, developed human resources and focused on translating research findings into health advice. The Australian government deserves high praise for the increase in medical research funding. However, as health and medical challenges continue to mount, it is also a time to remind the government that although a good start, this is merely the beginning of a long-term endeavor.

With momentum from the government's commitment to the Wills Review, Australia has the opportunity to cement its position as one of the premier biomedical research venues. The returns on medical research investment are astounding. An American study in 2000, *Exceptional Returns: The Economic Value of America's Investment in Medical Research by Funding First*, an initiative of the Mary Woodard Lasker Charitable Trust, found that the increase in life expectancy between 1970 and 1990 was worth US\$57 trillion to Americans. A separate report commissioned by the Australian Society for Medical Research entitled *Exceptional Returns, the Value of Investing in Health R & D in Australia* in 2003 showed that investments in medical research have at least a 500% return in national economic benefit. With a sure bet and considerable impetus, it is critical that the Australian govern-

ment reinforce the momentum and continue to increase this investment in the well being of its people.

Despite the recent funding increase, Australia still lags behind many OECD countries in R&D investment, and faces competition from other developed countries. Singapore is a prime (and geographically close) example: they have invested in a S\$400 (US\$240) million 'biomedical city' and proclaim the biomedical sciences to be one of the pillars of their economy. This competition is not merely a contest for economic supremacy, but has significant ramifications for the retention of talent in Australia and thus a direct bearing on the quality of research. The Wills Review provided a series of recommendations to encourage and retain Australians in medical research. The NHMRC has acted on these recommendations with considerable increases in investment that included A\$100 (US\$75) million for career development for young researchers. However, these figures conceal a cold reality: young scientists continue to find careers in medical research in Australia unattractive. The restructuring of the NHMRC research fellowship scheme in response to the Wills Review leaves a significant funding gap in the career paths of young scientists. Many senior post-doctoral researchers find themselves in limbo—the intermediate Career Development Awards are too scarce and the requirements for a Senior Research Fellowship are beyond reach. Although the NHMRC has attempted to address the transition to independent research, it needs to ensure that career progression is realistic enough to encourage promising young scientists to remain in biomedical research in Australia.

The Australian government should not lose sight of the importance of basic research. It is the outcome of 'uncommitted' exploration that provides the foundation for 'applied' research. Thus, the government should continue to support work fueled by curiosity while simultaneously encouraging goal-oriented studies and industrial collaborations. A top priority is to designate sufficient funds for maintaining infrastructure. Infrastructure cost is substantial and unavoidable, but without it even well funded scientists struggle to work efficiently. At present individual scientists, particularly those at independent research institutes, devote much effort piecing together the sometimes fickle support from affiliated universities and state governments.

Despite the increased appropriation, a third of the applications to NHMRC in 2002 that were deemed worthy of support could not be funded. Of course, there is a limit to the government's capacity and it should be commended for its positive steps in tackling an area of utmost importance. Public opinion of biomedical research in Australia from a 2002 poll by Research Australia suggests that the vast majority (86%) of Australians are interested in medical research and more than 76% surveyed think it should be increased. No government should ignore such public support, and the Australian government, having set the wheel in motion, should continue to turn it and reap the rewards.

